UNIVERSITY OF MUMBAI

Syllabus for sem V & VI
Program: B.Sc.
Course: Web Design and Technologies

(Credit Based Semester and Grading System with
effect from the academic year 2013–2014)

T.Y.B.Sc. Applied Component Web Design and Technologies Syllabus
Credit Based and Grading System
To be implemented from the Academic year 2013-2014

SEMESTER V

Course	TOPICS	Credits	L / Week
USACWD501	**Principles of Web Design & Web Technologies – I**	**2**	**4**
USACWD5P1	Practicals of **USACWD501**	**2**	**4**

Theory

Course: USACWD501	TOPICS (Credits: 2 Lectures/Week: 4) Principles of Web Design & Web Technologies – I	
Unit I	**Web Site Design Principles –** Design for the Medium, Design for the Whole Site, Design for the User, Design for the Screen **Planning the Site –** Create a Site Specification, Identify the Content Goal, Analyze your Audience, Build a Web Site Development Team, Filenames and URLs, Directory Structure, Diagram the Site **Planning Site Navigation** – Creating Usable Navigation, Using Text-Based Navigation, Using Graphics- Based Navigation **Creating Page Templates –** Understanding Table Basics, Table Pointers, Creating a Page Template **Web Typography –** Type Design Principles, Controlling Typography with the <FONT> Element, Controlling Typography with Cascading Style Sheet, Styling with CSS **Graphics and Color –** File Format Basics, Computer Color Basic, Choosing a Graphics Tool, Using the <IMG> Element, Working with Hexadecimal Colors **HTML Frames –** Understanding Frames, Frame Syntax, Targeting in Framesets, Planning Frame Content **Publishing and Maintaining Your Web Site –** Publishing Your Web Site, Testing Your Web Site, Refining and Updating Your Content, Attracting Notice to Your Web Site **HTML -** HTML 4.0 Tag Reference, Global Attributes, Event	15 L

	Handlers, Document Structure Tags, Formatting Tags, List Tags, Hyperlinks, Image & Image map, Table Tags, Form Tags, Frame Tags, Executable Content Tags and Style Sheets,CSS	
Unit II	**Introduction to Java Script (Functions, Objects)** **Client-Side Java Script** -Java script in web browser, windows and frames, the document object model, events and event handling, forms and form elements, dynamic html and saving state with cookies **XML-** Introduction to XML, Problems with HTML & SGML, Types of XML Markup, Document Type Definitions, Using Style Sheets with XML, Creating XML well formed, valid Documents.	15 L
Unit III	**Introduction to .NET Framework 3.5(or above):** Overview of .NET Framework, Objectives, Main components of .NET Framework and their overview, Types of Applications **.NET Framework Architecture**– CLR(Goal of CLR, Services/Features, Benefits, Managed Execution Process, Automatic memory Management), CTS(CTS Overview, Type Definitions, Type members, Different types of data such as class, delegates, pointes, arrays, interfaces), Meta Data, Structure of Metadata & Self Describing Components, Cross Language Interoperability & CLS, Assemblies(Assembly overview, Benefits, Contents, Types) **Introduction to VB 2008 :** Adding forms, controls, Setting Properties, Adding code, Handling events, Displaying simple messages, Data Types, Declaring variables, Strings & constants, Operators, Expressions, Declaring methods, subroutines, procedures, Passing & returning Arguments, Decision Statements (if, select), Loops, Adding Comments, Converting Data types **Working with Strings, Dates & Time** : Char, String class & Functions, Converting strings to numbers, DateTime class, Formatting Dates **Window Controls and Events**: Using basic window controls such as forms, labels, buttons, text boxes, check boxes, radio buttons, list boxes, combo boxes, Adding properties, Processing events, Using various dialog boxes such as MessageBox, OpenDialog, SaveDialog, StreamReader & StreamWriter, Using menus, Adding toolbars, status bars, MDI form, Processing events, Adding event handlers for one/many events **Structured Exception Handling :** try, catch, finally blocks, throwing exceptions, Err object, Using masked Textboxes **Collections** : Creating & manipulating arrays, Using System.Array, ArrayLists Collection,	15 L
Unit IV	**OO Programming** : Understanding objects, creating classes, adding constructors, properties, methods & variables, access specifiers,	15 L

| | Shared members, Defining & using events, Implementing inheritance, Partial classes, Creating, referencing, importing namespaces **Building Class libraries** : Understanding class libraries, using strong names, registering assemblies, designing class libraries **Creating Custom controls** : Enhancing Existing controls, Building compound controls, Adding custom Events **ADO.NET :** ADO.NET & Data management, Advantages of ADO.NET, ADO.NET Object model, Data objects, Data Source Interaction objects, .NET Data provides Using Connection, Command, DataReader classes, Queries returning result sets, scalars, Passing parameters in queries Disconnected Data, Data Adapter, Using Data Set(Typed), Data Table, Data Row & Data Column, Command Builder, Modifying & Updating disconnected data Creating and using Data sources, Binding(Simple and Complex binding) controls with data sources, DataGridView Control, Role of BindingSource, TableAdapter, AdapterManager & BindingNavigator classes **LINQ** : Introduction to LINQ, Advantages of LINQ, Using From, Where, Order By, Select | |

References

1) Using HTML 4, XML & JAVA by Eric Ladd & Jim O'Donnell.   (Platinum Edition) (PHI)
2) Principles of Web Design by Joel Sklar
3) Java Script the definitive guide by David Flanagan
4) Ajax for Dummies Steve Holzner,PhD, Wiley Publishing Inc
5) XML Unleasdhed Techmedia SAMS,Michael Morrison
6) Murach' Visual Basic 2008, Anne Boehm, Murach
7) Mastering Visual Basic 2008, Evangelos Petroutsos, Wiley-India Edition
8) Beginning Microsoft Visual Basic 2008(Wrox) by Thearon Willis & Bryan Newsome

Additional Reference

1) Ajax in Action Dave Crane,Eric Pascarello, Darren James
2) Beginning javascript ,Wilton, Wrox Publication
3) Head first HTML whith CSS and XHTML, Elisabeth freeman and Erice freeman, SPD O,reilly
4) AJAX For Beginners , Ivan Bayross And Sharanam Shah, SPD The team
5) Murach's VB.NET Programming with ADO.NET

Practicals

USACWD5P1	Credits: 2 Pract/Week: 4
	1. HTML Tags, Tables, Image Mapping 2. HTML Tags- Form Tag, Frame Tags, Applying CSS(Internal and External style) 3. Representing Data using XML with CSS/XSL and Internal/External DTD 4. Executing Client Side Scripts using JavaScript 5. VB.NET – Programming with controls, Data Conversion & Message box, 6. VB.NET – MDI, Menus, Toolbars, Dialog boxes & Collection

	7. Implementing OOP concepts in VB.NET, Creating Custom Controls, 8. ADO.NET Programming & Data Binding in VB.NET

Course	TOPICS	Credits	L / Week
USACWD601	**Principles of Web Design & Web Technologies – I**	2	4
USACWD6P1	Practicals of **USACWD601**	2	4

Theory

Course: USACWD601	TOPICS (Credits : 2 Lectures/Week: 4) **Principles of Web Design & Web Technologies – II**	
Unit I	**Introduction to Ajax -**Working of Ajax from a user's perspective and a developer's perspective, Applications of Ajax: Searching in real time with live searches, Getting the answer with autocomplete, Chatting with friends ,Dragging and dropping with Ajax, Getting instant login feedback, Ajax-enabled popup menus, Modifying Web pages on the fly, Google Maps and Ajax. **Ajax and PHP** : Starting with PHP ,Getting a Handle on Variables ,Handling Your Data with Operators,Making Choices with the if Statement ,Round and Round with Loops,Handling HTML Controls,Getting data from text fields.Checking out data from check boxes,Tuning in data from radio buttons ,Sending Data to the Server, Reading Files, Writing Files, Working with Databases **XML and Ajax** Creating and opening the XMLHttpRequest object., Handling asynchronous downloads,relative versus absolute URLs , Interactive Mouseovers Using Ajax ,Server-Side Scripting ,Choosing a server-side scripting language ,Connecting to a script on a server, Setting up a Web page to read XML ,Handling the XML you read from the server, Extracting data from XML ,Passing Data to the Server with GET, Passing Data to the Server with POST. **Ajax in Depth** Returning JavaScript from the Server, Calling a Different Domain , Reversing the Roles: Performing Validation on the Server, Getting Data with HEAD Requests., Returning all the header data you can get ,Finding the last-modified date, Debugging Ajax ,Using GET to get text ,Using GET to get XML ,Using POST to post data and get text, Using POST to post data and get XML.	15 L
Unit II	**Handling XML in Ajax Applications** Requesting XML Data in Ajax., Extracting XML Data Using Properties ,Right on the node ,Introducing the JavaScript properties,	15 L

	Navigating an XML document using JavaScript properties, Extracting with node Value, Accessing XML Elements by Name, Accessing Attribute Values in XML Elements, Validating XML Documents in Ajax Applications **Working with Cascading Style Sheets in Ajax Applications** An Ajax-Driven Menu System, Setting up the styles, Handling mouse events, Displaying a menu ,Hiding a menu ,Handling the menu items ,Displaying Text That Gets Noticed ,Styling text, Handling colors and backgrounds, Positioning using styles **Ajax Design Issues** Breaking the Back Button and Bookmarks, Giving Visual, Cues, Leaving the User in Control ,.remembering All the Different Browsers, Showing Users When Text Changes, Avoiding a Sluggish Browser ,Handling Sensitive Data, Creating a Backup Plan., Showing Up in Search Engines, Sidestepping a Browser's Cache	
Unit III	**ASP.NET Applications** – Evolution of Web Development, Creating ASP.NET Applications, Designing Web pages, Anatomy of web form, Writing Code-behind and event handlers, ASP.NET Files, Application Directories, Server Controls, HTML Control classes, Page Class, Global.asax files and application events, ASP.NET Configuration files **Web Controls** – Advantages of web controls, Web control classes, AutoPostBack & Web control events, **State Management** – Maintaining state using ViewState, Query String, Cross Page Posting, URL Encoding, Cookies, Sessions State, Application State **Validation & rich controls** – Validations & Validator controls, Undertaking regular expressions, Calendar control, AdRotator, Advertisement file, AdRotator class	15 L
Unit IV	**ADO.NET & Data Binding** – ADO.NET Fundamentals, Single-value, Repeated-Value Data Binding, Data binding with ADO.NET, Data source controls, GridView, Defining columns, Selecting, Sorting & Paging GridView **Using XML** – XML Role in .NET, XML Classes **Protection & Performance :** Determining security requirements, ASP.NET Security model, Caching, Types of caching, Example of output caching, data caching, **AJAX in ASP.NET** –Using ScriptManager, Partial refreshes, UpdatePanel, Triggers, Timed Refreshes **Web Service –** What is web service, ASP.NET Web services, Creating a simple web service, Consuming Web service	15 L

References

1) Ajax for Dummies Steve Holzner,PhD, Wiley Publishing Inc
2) Beginning ASP.NET 3.5 in VB 2008, From Novoice to professional, Second edition, Mathew Mcdonald

Additional References

1) Ajax in Action Dave Crane,Eric Pascarello, Darren James

2) AJAX For Beginners , Ivan Bayross And Sharanam Shah, SPD The team
3) Beginning ASP.NET 3.5: In C# and VB (Programmer to Programmer) By Imar Spaanjaars
4) Murach's ASP.NET 3.5 with VB2008
5) ASP.NET 3.5 Application Architecture & Design –Vivek Thakur(SPD-PACKT)

Practicals

USACWD6P1	Credits: 2 Pract/Week: 4
	1) Retrieving data from server & Sending data to server using AJAX
	2) Retrieving data from HTML form using PHP
	3) Retrieving Employee Details/ Registration Details from the database using Ajax and PHP
	4) Adding ,Modifying and Deleting data from Client side to into table in MySql
	5) Fundamentals of ASP.NET such as using HTML/Web Controls, Autopostback, Application events, configuration files
	6) State management, Validation & Rich controls
	7) ADO.NET in ASP.NET with Data Binding, Interacting with XML documents,
	8) Performance improvement using Caching, Creating & Consuming web services